AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICES CURRENT.

"*O fortunatos nimium sua si bona norint*
"*Agricolas.*" . . . . . VIRG.

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AGRICULTURE.

From the London Farmers' Journal.

HOLKHAM GRAND ANNUAL

Sheep Shearing Meeting, &c

This noble and useful festival commenced on Monday last, the 3d inst. and notwithstanding the wetness of the morning, a very numerous field of horsemen joined Mr Coke and his friends from the Hall to commence the business of the day, according to the arrangement previously made, which stood in the printed bills delivered to the company, thus:—"Exhibition of horses, pigs, implements of husbandry, and shearing sheep at the farm premises. Longlands Inspection of South Creek, Waterden, Egmere, and Quarles Farms. DINE AT HOLKHAM HALL."—The animals and the implements will be enumerated hereafter: the novelty of the occasion was the exhibition of *horses*, which were successively shewn and led off in view of his Royal Highness the Duke of Sussex, who accompanied Mr. Coke in his carriage. It is with unfeigned sorrow that we state an accident which happened two or three days before, and which prevented Mr Coke from riding on horseback, as he always used to do, to explain every thing to every body: he was passing a grip, and from an unexpected jerk of the horse and the loose state of the saddle, he came to the ground, and was much hurt. This is the more remarkable, from its coincidence with a sprain in the ancle received by his Royal Highness the Duke of Sussex about the same time, and which it was feared would have prevented the gratification the company received in his Royal Highness's presence.

The following Noblemen and Gentlemen, with many more, were present on the First Day:—

His Royal Highness the Duke of Sussex, Prince Potemkin (Russia) Prince Trabetzkov (Russia), the Marquis of Downshire, Earl of Albermarle, Lord Waterpark, Lord Erskine, Lord Anson Lord Ebrington, Lord Lynedock, Lord Delawar, Hon Mr. Keppel, Hon George Walpole, Hon. Gen Fitzroy, Hon. Mr Theiluson, Sir John Sinclair, Bart Sir Wm. Hoste, Bart G. S. Kett, Esq. (High Sheriff of Norfolk) Marshall, Esq. (High Sheriff of Worcestershire), T W. Coke, jun Esq M. P. Colonel Stevenson, Captain Edgill, R N (Somersetshire,) Colonel Dixon, Edward Roger Pratt, Esq Mr Curwen, M. P. Mr Pringle (Selkirkshire), Mr. Phillips, (Lancashire), Mr Wyndham, Wiltshire, G. Tollet, Esq. (Staffordshire), G W Hall, Esq (Gloucestershire), Mr. Rhodes, and Mr Tottie, (Yorkshire), Thomas Greg, Esq (Herts.) Robert Patterson, Esq (Baltimore), R. H. Wyatt, Esq. (Staffordshire), C. Deering, Esq (Middlesex) Monsieur Petit (Paris). Mr. Owen (Wales), Mr. Anderson (Hamburgh), Rev Dr Helcomb (Somerset), M. F. Rishton, Esq. Edm. Rolfe, Esq. Dr Rigby, Alderman Foster, Rev. Archdeacon Bathurst, J. Postle, Jun. Esq. Wm. Lukin, Esq Edward Taylor, Esq (Sheriff of Norwich) Mr. Geo Gunning (Kent), Thomas B Beevor, Esq. John Ellman, Esq. (Sussex), A. Hammond, Esq. Rev. G Preston, Rev. R Odell, Rev. G. Glover, Rev Henry Wilson, Rev. Wm. Newcome Rev. R. Elwin, Rev. P. Ward, A Hudson, Esq. P M. Case, Esq Wm Dalrymple, Esq. Thomas Wildman, Esq Lieutenant Pilch, John Foster, Esq (Bedfordshire), S Langley, Esq (Essex), Mr. Walker, (Worcestershire), Mr. W. Bagweed, and J Smithies (Hants), R. C. Harvey, Esq Mr. S Taylor, Mr W. Pratt, and Mr. Nash, (Cambridgeshire), Mr Kimpton (Herts), Mr. Gratton (Derbyshire), Mr. Curteis (Kent), Mr Davison and Mr. Powell, (Wales), Mr J. Bailey and Mr. J. Maxwell, (Thorney), Mr. J. Stickney (Holderness), and many eminent Agriculturists from Norfolk, Suffolk, Essex, and various parts of the kingdom.

About eleven o'clock the company rode off to breake to view a farm only two years in the occupation of Mr. Oakes, jun The state it was in when entered upon was detailed to the company, and the improvements made by the present tenant were very great and striking; not only for the cleanliness of the husbandry, but for the great increase of produce which it presented. A piece of Talavera wheat, from three years grass lay, autumn ploughed, and folded, attracted particular attention It is not in the compass of a newspaper report that we can enumerate and comment upon the various objects of field management; happily the facts are clearly presented to the visitors, and remain on the mind as pictures, which they may transfer to their own fields: no essays on husbandry, useful as they are can equal the impressions made by these exhibitions, and many persons to whom reading may not be a very inviting amusement, may see here, in the book of Nature, facts which they can neither overlook nor forget. About three o'clock the company returned to the Hall, and about 350 sat down to an excellent dinner.

After the cloth was drawn, Mr. Coke gave "Constitution and King"—He then introduced the health of the "Bishop of Norwich," with a very affectionate and just eulogium. The Archdeacon returned thanks—"Live and let live"

Mr. Coke then rose, and addressed the company on the origin and object of the meeting; it was for the improvement of Agriculture in all its branches, and for that alone, that the meeting had been established. He would not say much on the subject of the misconstruction which had been put upon it, nor would he imitate the conduct of those who (for what reasons he would not undertake to say) had often misrepresented the objects of the meeting. It had never been his intention, nor had it ever been his wish, that political matters should be mixed up with the business of the meeting. He invited to attend it men of all parties, and it would ill become him to give offence to his visitors and friends by such a discussion: he invited persons from every part of the empire, and foreigners from all countries; and surely he might be allowed to know that party politics could not be welcome, nor well received, nor well understood, in such an assembly. He believed he might say, that some improvement had followed the institution; that some good, and no harm, had been done by the meetings, which had been stigmatized with a reproach which he hoped what he now avowed would finally repel and remove. Mr Coke then alluded, in the most respectful manner, to the honour done him by the Duke of Sussex, and delivered an energetic eulogium on his Royal Highness's character.

"His Royal Highness the Duke of Sussex" with three times three. This toast was received and drank with the utmost enthusiasm. His Royal Highness rose, and the desire to hear immediately subdued the applause. His Royal Highness spoke as follows: "Gentlemen, it would be extreme presumption on my part to make a long speech in such a place, where important instruction is both expected and prepared, instruction in which I should be glad to partake, but have no pretentions to bestow. I came here to learn; and that I may learn, it becomes me to be silent. I cannot, however, but highly approve of the wisdom and propriety of what we have just heard from my noble friend Mr. Coke. Certainly, political cavils, and political feelings, sometimes may be injurious to meetings, the objects of which are either improvements in industrious pursuits, in science, or in objects of charity, or associations for the benefit of society in any way: in all these cases the introduction of such discussions may do harm, or obstruct the good, and ought therefore especially to be avoided. In expressing my sense of the very kind and flattering testimonies of your regard, I cannot omit to congratulate the company, as a body of agriculturists, on the excellent spirit of these meetings. I entertain feelings of the highest gratification in looking on the advances in industry and knowledge which have been so happily promoted by the exertions of my noble friend: his wise views, his liberal conduct, the results that are diffused, cannot fail to be highly beneficial, and promise, with the prospect of permanent peace, to issue in the greatest blessings to mankind. Such is he, that hospitality is synonymous with his name; and I wish it were in my power to portray the feelings and the esteem which such a character deserves. I may call him the greatest Commoner in England (I don't say the first Commoner, for that is the Speaker of the House of Commons), I say the greatest Commoner; and the very county of Norfolk partakes of his virtue and his fascination; for I cannot set my foot in it (lame as I am) but I leave all my cares behind me: the name of the Norfolk Yeomanry carries a charm (I do not seek to account for it at this moment, and I no sooner come among them but I banish sorrow, and pleasure takes possession of my heart" The grace and affability of his Royal Highness in the delivering of this speech, were greeted with long continued applause.

"The good use, and not abuse, of the plough."

"The Mayor of Norwich, and prosperity to the City."

"The Mayor, and prosperity to the town of Lynn."

"The Town of Yarmouth, and may it continue to preserve its independence.

Mr Coke prefaced "The High Sheriff of the County of Norfolk" with an apology, for having omitted in due course. The High Sheriff returned thanks.

Mr. Coke then rose, and expressed his gratification at seeing so large and respectable a meeting. He lamented the accident which prevented him from riding with the company as formerly, to point their attention to the particular objects of the occasion; but that necessary, and to him delightful, task, had been undertaken by his noble friend Lord Albemarle, and a more able and zealous friend to agricultural improvement could not be found. By his skill and ingenuity he had done wonders at Quidenham; and had lately so changed the appearance and disguised the quality of a tract of poor waste, that it might be now mistaken by its productions for some of the best land in the neighbourhood. This occasioned him to remark how erroneous, and how very unjust and injurious it might be to estimate the value of land by its productions, and to set a rent upon it by a given proportion of those crops which could not be produced but by the application of that skill and capital, and that spirit and perseverance, which should be encouraged by long leases and liberal terms: this, though true and right in its nature, was especially due to good managers: the others deserved to be charged a little more to enliven their exertions and sharpen their wits; but if this were not the best mode of forcing them into the right way, the other would certainly effect it; for if men were not universally awake to observation, they might yet be guided by that which was their interest. This he said with the greatest freedom, because it must also be the interest of the landlord; and he sincerely

regretted that it was not more generally received and acknowledged. Mr. Coke then adverted in his handsome manner to the size of the room, which, though large at all other times, was by far too small on these occasions; and he regretted that on that account he could not accommodate his friends as he wished. He concluded by returning to the subject of Lord Albemarle's improvements, and giving his Lordship's health, with three times three, which was drank with unbounded applause.

Lord Albemarle, in returning thanks, said, it was impossible for him to express his sense of those testimonies of approbation which he had the happiness to receive. His hon. friend Mr. Coke had paid him some high compliments on his management: he must acknowledge that his farm was in a high state of cultivation, since Mr. Coke said so; for certainly he was a fit and proper judge, and a man whose report was not to be contradicted. Notwithstanding, however, he (Lord Albemarle) had very little merit, and might escape the charge of vanity, though he allowed the justice of his friend's praise for his farm was managed by a bailiff of such merit, that he could not resist the opportunity of ascribing the success of his farming concerns entirely to the talents and skill of that person. Lord Albemarle then, in a strain of happy humour, adverted to the friendly sparing which had been often witnessed between his Hon. Friend and himself, to the no small diversion of the company. "For though I am sure (said his lordship) to get the worst of it, I always arm myself with patience, and endeavour here and there (if there be any chance) to pick a hole in his coat for the credit of my observation and judgment. On the present occasion my hon friend has taken another ground: he has found no fault with me; he has been over my farm, and has rewarded me with such abundance of approbation, that I cannot in decency find any fault at Holkham. But there is another reason why I can find no fault at present with my friend's farm, and that is, I have not yet seen it: but I would not have him reckon upon my forbearance; he must not think to cajole me out of my senses, nor purchase a flattering report by example he has set. To be serious: Gentlemen, there never was a time when it was of more importance to shew what land is capable of producing; the expences of cultivation are chiefly in labour, and if inferiour lands should return to waste, what must be done with the people." The Noble Lord concluded by expressing the happiness it would give him to shew his farm to any of the company after the present meeting; for an introduction to Holkham would always be a certain and sufficient passport to the hospitalities of Quidenham.

Sir John Sinclair rose, and expressed his approbation of the sentiments that had fallen from the Noble Lord. It was unnecessary for him (Sir John) to enlarge upon the benefits of good husbandry, or the necessity of employment; but there was one point of great importance to the present subject. It was a question that he must particularly ask, whether the great improvement in the experiment alluded to, had been made without foreign manure? He conceived that great improvement yet remained to be effected by better husbanding the manure made on a farm; and it required to be distinctly stated, to prevent misconception, what part of the success might depend upon the point in question.

Lord Albemarle explained. His Lordship observed, that no foreign manure, nor any pulperized manure was used; but to prevent the possibility of mistake, he would recapitulate the whole process in a few words. It was an old and poor sheep down, covered in many places with ling, or which it was cleared by ploughing and so on, but not pared and burnt. The first crop was oats; the second crop was turnips, fed off: the land was then marled and prepared for turnips a second time, which crop was again fed off; and the present crop is wheat, which has been estimated by its appearance at forty bushels to the acre. For the sake of brevity, he merely stated the facts, and left others to reason upon them.

Sir John Sinclair was peculiarly happy to hear such an explanation, and pronounced the experiment to be one of great merit and importance; he would merely notice his satisfaction, and beg leave to give as a toast—"The pleasure of enclosing wastes."

Mr. Coke then rose, and in a highly appropriate and affectionate eulogium, proposed the health of "Lord Erskine;" which was drank with three times three, with great applause. Many of the company remembered the entertainment his Lordship afforded them two years before; and Mr. Coke alluded to his Lordship's agricultural studies in a strain of humour which called up similar expectations. He (Mr. Coke) remembered the time when he (Lord E.) did not know wheat from *lavender*, and therefore his Lordship's improvements were the more creditable: his Lordship had also been an advocate for *Merinos*, but he did not know whether he ever kept any; and if he did, he should be anxious to know whether he had them yet. Mr. Coke regretted the absence of Mr. Westerd, and some other gentlemen, from whom the company might have received correct information.

Lord Erskine rose to return thanks. His Lordship began by observing that his Hon. Friend performed every thing by plan and system, but he thought that there was some error, or hardship, in the present instance. His Hon. Friend knew very well the importance of a suitable rotation of crops, but did not appear to consider that there might be advantages or propriety in a suitable *rotation of toasts*. "Here am I (said his Lordship,) held up as an example in agricultural knowledge, but the instances are no proofs of my judgment; and I am placed next in rotation to my Lord Albemarle, where I cut as good a figure as a crop of thistles were you ought to have wheat. To mend the matter, my Hon. Friend has complimented me on a subject upon which I am ignorant, or, at least, what I know of it best is, that it is the most inexhaustible source of industry, and fund of national riches. I will, therefore, take up my *brief* from the good report of Mr. Curwen, happy to hear and to believe that enlightened minds, and competent skill and capital, can turn the labour of men's hands to the means of advantage and happiness to all. When I look round this noble domain, I see that which makes noble men honoured, and labourers contented; I see encouragement that puts the machine in motion; I see mutual confidence—good understanding—liberal covenant—capital skill—and *reward for skill and capital*; and this it is that makes men busy and successful—that promotes employment, good morals, and public prosperity. It has been said, and I think said in a mistaken sense, that labour is a curse: if so, it would be considered as happy if society could do without it; but then men must be very different beings from what they are, and from what it appears they were. The first man was placed where he had nothing to do; where the soil, untilled, produced spontaneously all the necessaries and all the enjoyments of life, agreeable to his then nature and wants; he knew nothing of agriculture no more than I do; he had no occasion for industry—he was idle—and *mischief broke in upon him!* It is just the same now, and has been ever since,—that idleness leads to vice and misery; and from all that we see, and all that we know, it appears not only that employment is necessary to man, but that labour is a blessing and not a curse! Well then, if men must be employed, and ought to be employed, what must they do? They cannot all weave stockings, and muslins, and cloth; or make watches and trinkets: we have had persons advising us to let the land, or good part of it, go back to a state of nature—to wastes and fox-covers, and to get from foreigners the bread upon which the people of this country should subsist. Gentlemen—There is a very large building called the New Bedlam, which I never pass without a sigh:—I hope it is not full; nor do I know whether all the people get there who are most worthy of such a provision; but I do think that the people I have just alluded to, have a striking claim to that national charity, and I wonder that their best friends don't apply to the statute, and place them in a receptacle adapted to their unhappy case. They say we should have *free trade*: no doubt but this is best for all nations who are on equal terms, but otherwise it is sheer madness, and deserves no consideration from reasonable men. Gentlemen,—I should be thought to overstep the precise line of my duty were I to expatiate on the causes of that difference which makes free trade impracticable with us; but it is necessary to state the fact, although I do not dwell upon the cause. Observe that I should not be understood to provoke any evil imputation, or couple political discussions with the matter in hand. I may explain my notion in this by a short anecdote:—A gentleman, whose name was *Caswe'l*, was addressed by a friend, who said, "Sir, if the C. were taken from your name, it would be *as* well." "What do you mean," cries the gentleman, "by punning upon my name, and ridiculing me?"—"I do not ridicule you,' said his friend; 'I only state a fact. Thus it was in many cases; and those who would run to meet offence, were pretty sure to find it, and might often fancy it where it was never intended. Now I say, Gentlemen, is it possible—is it tolerable—is it fit, that while foreign nations can grow wheat at 36s. a quarter, and bring it to the London market at as little expense as it can be brought from Yarmouth;—is it fit, or is it fair that it should be brought against British grain free of duty? What! though my friend, Mr. Coke, with all his skill and capital, might keep his barns and his granaries full of corn, rather than meet so injurious a competition,—what is to become of the tenant farmer who *must* go to market—who must sell for money to pay the most pressing demands—who must sacrifice his property as long as he has property left?—Gentlemen, this is the fact—I do not go any farther. I do not blame any man; perhaps I do not think that all this is *as well* as it might be; but I cast no reflections. I only beg to say, in my humble and mild way, that I do not see how they [*with vehemence*] can acquit themselves of dereliction of duty, who blindly look on, and calmly persist in the course that leads to agricultural ruin! Without due encouragement to agriculture, it is impossible that this nation can recover from the distress that surrounds it. I do very earnestly hope, and recommend, when this question is before the Legislature, that they may look to their own knowledge and experience, as men who have practical acquaintance with the facts of the times; but whether they do so or not, it does not follow that the cultivators of the soil should suffer and bear, without speaking, and without complaint; it cannot be thought that an agricultural meeting should commit suicide, and promote their own destruction by silence and irresolution. Here is the plainest case—the most consistently argued—the most clearly proved—the most important to all—referred to a committee to examine *whether two and two make four*, while deeper distress, and more imminent misfortune hourly environ us! Gentlemen, to recapitulate the points of this question, or even to name them, would take up too much of your time. (*Hear! hear!*) The most able report that ever issued from the House of commons, the re-report on the poor laws, has been suffered to sleep in oblivion, while all the evils continue and are increased: we have not only men to maintain who can get but little work, but men who *will not* work, and chuse to lay the burthen of their idleness, and their stubbornness upon the funds which should maintain the unfortunate and the incapable. What is the remedy? The power is lodged (and very properly, since it must be lodged somewhere while it remains,) with the Magistrates. I have great respect for this body; their task is arduous, and unhappily it is difficult: the laws do not provide for the exigencies: the Magistrates can appeal only to each other, and must act from necessity, and according to their own discretion.

This is unfortunately the case; but how liable are we to err, and how unlike is this to those principles of law which leaves only the execution to the constituted authorities! I have wandered, Gentlemen, from the subject of agriculture, but not beyond its interests. With regard to corn, by the present system it is brought here when the price is high; but would

that price be high if the laws were properly adjusted, and placed on the basis of duties? If agriculture were encouraged—if capital were kept available for labour and good husbandry if the farmers were secured in prosperity, and enabled to return to the soil that which its produce took from it; if the expenditure necessary for the maintenance of the kingdom were distributed among its cultivators; then would the poor be employed—the farmers encouraged—the landlords paid—the manufacturers active—and all interests relatively supported. Instead of this, what do we by the present system? Is it for the general interests of commerce, that we should nominally shut the ports or the markets? No, but it is for the advantage of speculators, who hover over the nation's situation, and pounce upon its distress like a hawk, making a prey of the exigencies of society. Gentlemen, I am really surprised that this question should not be understood by those whose duty it is to decide the point. Go to a race, and ask any one, if 10 stone is to be put upon the back of *this* horse, and *that* is to carry only the weight of the saddle and bridle, whether it be a fair match? There is not a man but will say it can be no race; they know this well enough; but the other case is just as plain, and the odds will be as all the globe to a China orange that we are dead beat." His Lordship then entered into a very feeling appeal on the present deplorable state of the poor, and drew a forcible picture of what ought to be their situation, where industry should meet its due reward, and the labour of men be justly valued We are obliged to pass over a number of happy allusions, and come to the conclusion of a most able speech, which as well for the manner as the matter, was truly gratifying. His Lordship observed, that his Hon. Friend had been pleased to repeat the story of the *lavender*, and he (Lord Erskine,) could do no better than repeat his defence. The truth was, he knew a crop of wheat well enough, but had never before seen it under *the drill*. Let any body look at a raw country recruit, with his long frock and red handkerchief, and see him afterwards when his uniform was on, his toes turned out, and his shins and fingers had been rapped every day for three months, and he would defy even his father and mother to know him. "With regard to the Merinos, (said his Lordship,) which I am called on to defend. I own I was once loud in their praise; it was at a time when wool was dear, and many good things might be said to encourage them, but the fact is, I never had one in my life, and cannot speak from experience. I do not think lightly, however, of the Spaniards altogether; but I may take a little longer time for observation before I say any more about them." His Lordship concluded with thanking the company for their kindness and attention and sat down amidst the loudest plaudits.

Lord Albemarle then rose, and proposed the health of Mr. Coke, in terms the most affectionate and gratifying. The toast was drank with long cont nued applause, and Mr Coke rose to return thanks, evidently much impressed with the tokens of esteem and admiration with which he was greeted. He commenced with returning his sincere thanks to the company for their kindness and their attendance, observing that it was the most respectable meeting he ever had the honour to see at Holkham. He adverted to the benefits which must accrue from such an assemblage of practical farmers, and hoped they would severally carry home some hints for improvement, and that they would communicate them to their neighbours and friends. This he said, because he had been often assured that advantages had followed, and he was very glad to believe and hope that it was so; in such cases the progress was slow at first, but the rate of increase would be greater with time. Mr. Coke then alluded to similar useful and praiseworthy exertions, and especially to those of his friend Mr. Curwen, to whose skill and perseverance he paid a high compliment; a more cold, stiff, and intractable clay than that gentleman had to work upon, could not easily be found, and he had really performed wonders upon it which, for the example to the occupiers of such land, was especially valuable. Mr Child had done him (Mr Coke) the honour to present him with a copy of Mr Curwen's late Report of the proceedings of the Cumberland Agricultural Society, which he strongly recommended to the perusal of practical farmers, as well as the code of Agriculture In short there was no person more deserving of public esteem, nor more useful to his country's improvement.

"Mr. Curven, with three times three." In rising to return thanks, the hon gentleman delivered one of the most impressive speeches ever heard at Holkham; but we are sorry to be reduced to the necessity of barely giving a sketch of it, as it would be difficult to do justice to the argument, and impossible to convey the force and elegance of the elocution. The speech in the outset was of a retrospective kind, and related to his early acquaintance with the site of Holkham. Mr. Coke had observed that he (Mr. Curwen) had never done him the honour of a visit before; but Mr. Curwen stated, that instead of being the newest, he was probably the oldest visitor at Holkham then in the room, for he had known the country 50 years ago, a more miserable country a more barren and deplorable, and neglected place, he had never seen. To view it now, and to look back to that time, might be likened to the effects of the sorcerer's wand; for surely no real scenes in nature—no efforts of human skill and perseverance—had ever wrought such a change on any other spot on the globe! But Mr. Coke's exertions his knowledge—his sagacity—his liberality—his example—had made the men, as well as the land, quite different from what they were; by his progress and encouragement he had made the men a new race, and had advanced them as much in the scale of character and of human happiness, as he had changed the land from a barren waste to a beautiful garden. Such efforts were certainly prodigious, and such effects were consoling to our hopes of the most extensive benefit to mankind at large. Mr. Curwen then applied his remarks to the county of Norfolk in particular, which was once thought to be only fit to cut up in ships to make roads for the rest of the kingdom, but was now in a condition to hold out an example to the kingdom, accompanied with this assurance, that if such improvements were practicable there, none need despair of like comparative success, and superiority over their former state of culture. "The riches of the county of Norfolk (said Mr. C.) are not in the soil, but in the intelligence and industry of its cultivators. Look round the country—observe the tenantry—consider the fields—the stock—the produce of the land—and the comfort and respectability of the occupiers—and then reflect, that all this is owing to the wisdom and liberality—to the unequalled encouragement that Mr. Coke has given to that pursuit in which he delights—the pursuit which of all others is most calculated to ennoble mankind, and improve the condition of humanity To this example I owe what little I deserve of the compliments my hon. friend has paid me, and the landlords of Great Britain owe a debt of gratitude to Mr. Coke, who has raised the character o the yeomanry, and infused a spirit of intelligence, which will spread to every part, and produce benefits incalculable. I caught this spirit of my hon. friend—I fostered it—I knew that, by connecting and uniting the powers of example and precept, men would be led to observe and adopt new methods, and that the moral effects of general communication and competition, would not be less beneficial to social improvement than to individual advantage. In your hands (continued Mr. Curwen, addressing himself to Mr. Coke) these effects are visibly pre-eminent—I see here the smile of content—the evidence of good widely diffused—the face that mantles with love—and the eye that sparkles with gratitude if there be any that are ignorant of the benefits of such conduct, let them come here and learn discretion—let them come here and behold the fruits of condescension, the advantages of mutual confidence; let them catch some inspiration from that homage of the heart which is paid to those who do good; then let them convey to others the lesson they have learned, and contribute to unite the whole family of mankind in the bonds of mutual prosperity This has been the course pursued by you, Sir. and there is not a man who ever saw, or who ever heard of such beneficence and wisdom, but his heart has leaped in his bosom with joy, and he has wished that such a man could live for ever. Sir, the example you have given is noble—the instruction you have bestowed will never be forgotten—and though such actions are not blazoned in history, they will pass from generation to generation, propagated by thousands of tongues; you have increased the fruits of the earth—given bread to the poor, and employment and reward to meritorious industry—and finally, you have shewn that men are to be governed by liberality, and excited to action only by a just assurance, that they shall reap the advantages of their own exertion. May your example, and the splendid success of such conduct, be impressed on the minds of the great of this and all future ages." Mr Curwen concluded by expressing his thanks to the company for the honour done him, and the attention which they had extended to his remarks on a subject, which, though inadequately treated, was ever most welcome to the hearts of all who visited Holkham. Mr Curwen's speech was greeted with the most heartfelt testimonies of applause and approbation.

Mr. Coke took notice of the observation of Mr. Curwen, that the people, the farmers around him and elsewhere, were an altered race of men. They certainly were much improved; for now, neglecting their own enjoyment, they leave the tables and crowd to hear what is said in this room and sorry am I that it is not large enough to afford them better accommodation. Mr. Coke added some spirited compliments on the character of the Norfolk yeomanry, and gave the health of Mr. Child, regretting that he could not come to the meeting.

"Mr. Foster," with many thanks for the honour of his company. Mr. F expressed his acknowledgments for so unmerited a favour, and took the opportunity of saying that the good example set at Holkham had extended generally not only to the county of Norfolk but to many parts more distant. In Bedfordshire, where he resided, great improvement had taken place. He remembered when their implements and their operations were as bad as they could be; but now he could say with pleasure, that their implements were good, and their husbandry commendable. He would not occupy the time of the company by any further remarks, because the day was far spent, and much remained to do.

"The Duke of Bedford's better health," with three times thee; which was drank with that applause which always accompanies the noble House of Russell.

"Sir Wm. Hoste, and the Wooden Walls of Old England," with three times three. Sir Wm. returned thanks.

"General Walpole," with three times three. Mr. Coke never failed to preface the toasts with suitable comments on the character of the individual, and the kindest expressions of the sense he felt of their attention in coming to his meeting. He paid the gallant general some handsome compliments on his skill in agriculture. The gallant general returned thanks, and begged leave a second time, to propose the health of Mr. Coke, which was received with the warmest testimonies of attachment.

"Archdeacon Bathurst, and the clergy of the county of Norfolk." The Archdeacon returned thanks and called up the Rev. Mr. Glover, who delivered an emphatic eulogium on the conduct of Mr Coke, and its effects on the surrounding people—an example worthy to be followed for the good of mankind, and as the truest evidence of Christian charity. The comforts of the poor, and the prosperity of the tenants, were equally promoted by the wisdom and liberality of conduct of the noble founder of these meetings.

"Mr. Wyndham,"—who returned thanks.

Mr. Coke next gave the health of "Mr. Rishton," with some affectionate observations, as one of the oldest friends he had in the room.

"Mr Alderman Foster."

"General Fitzroy," with three times three. Mr. Coke paid some compliments to the gallant general, as a spirited and intelligent agriculturist. General Fitzroy returned thanks: whatever merit he had as a farmer he learned all he knew at Holkham—and if he had not some skill it was his own fault, for he went to a good school. He expressed his happiness in following his friend's steps as far as lay in his power,

and hoped that application and perseverance would make him a creditable pupil. The evening being far advanced, Mr. Coke rose from the table, and the company withdrew to the Cattle Yard, where the prize sheep were exhibited, and some curious and meritorious extra stock.

FROM DUHAMEL'S ELEMENTS OF AGRICULTURE.

OF THE

DISTEMPERS WHICH MAKE CORN BLACK.

It must not appear surprising that many have confounded the Smut, *(La nielle)* properly so called, with Burnt Grain, *(Le Charbon.)* For, 1. The smutty and burnt grain are both met with in the same fields. 2. When the grain is much infected with the smut, a great many burnt ears are generally found: these two distempers very commonly come together. 3. These two distempers attack several kinds of grain, the substance of which is farinaceous. 4. In both distempers, the farinaceous substance is converted into a powder more or less black, and of a bad smell. These distempers have, nevertheless, distinct characters, which should distinguish them one from the other: we shall therefore treat of them separately, in two separate Articles.

ART. I.—*Of the Smut, properly so called.*

There are three points to be observed; the characters of the Smut; the causes of it; and the means of preventing it.

Characters of the Smut.

Since 1751, we have observed in the Smut, properly so called, the following characters.

1. This distemper entirely consumes the bud and substance of the grain.

2. It does not only affect the ear, but the whole plant is in some measure affected when it has got to a great height.

3. When a plant of Wheat is attacked, it is very rare to find an ear on any of the branches exempt from it.

4. In March and April, by carefully opening the sheath that covers the ear, and by examining the little ear which was not then above two lines in length, and was near the root, I have perceived this embryo already black, and attacked with this distemper; perhaps the other plants might have been infected later.

5. When the ear comes out of the cover, which the leaves form for it, it appears small and lean; the coverings of the grain are so altered, that the black dust appears through them; and thenceforward, instead of the grain, nothing is to be found but a black stinking dust, without substance. As the particles of this dust have little cohesion, and the coverings are destroyed, it is easily carried away by the wind, or washed off by the rain; so that nothing is generally housed but the skeletons of ears; if any of the dust remains, it is taken off in the sifting, and I have not found it contagious like that of burnt grain.

M. Tillet has also observed, that corrupted ears are often found in the sheath, though the sheath, which appears green and well-conditioned, has no signs of a decay. The upper part of the stalk of smutty plants is seldom straight at about half an inch beneath the ear. On pressing the stalk in this spot, it resists, and scarcely yields to the finger. On cutting the stalk two or three lines beneath the ear, it proves almost entirely full of pith; so that a very small aperture is to be perceived at the heart, whereas in sound plants this aperture is large. M. Tillet has hence concluded, that smutty plants are choaked up at the top of the stem.

Bearded Wheats are as subject to smut as those that have no awns. But neither M. Tillet nor myself have found any ears of Rye smutty.

Enquiry into the Causes of Smut.

The Smut cannot, as has been hitherto imagined, proceed from the grains not being impregnated, since it affects and destroys the organs that distinguish the sexes of plants long before the time of impregnating.

It can neither be attributed to the wet hanging on the ears, to fogs, nor the heat of the sun; since we have seen ears smutty long before they were disengaged from the coverings afforded them by the leaves, which still continue green, if the distemper is not got to any great height.

These same observations absolutely overturn the opinions of such as think that the cause of the smut is to be found in the grain already formed, but as yet of a milky substance.

It has been pretended that the dampness of the soil will occasion smut; but it is not perceived that corn is more smutty in the bottoms of fields than in the parts that lay higher; besides, why should one distempered plant be found amongst many that are healthy? Yet, as it appears that grain is more subject to smut in wet, than in dry years, it is possible that, though wet is no immediate cause of smut, it may be favourable to the progress of the distemper.

Some Naturalists have ascribed this distemper to insects. If I cannot absolutely contradict this, I can, at least, assert that, being at first of that opinion, all the researches I could make to establish its reality were of no effect. I have, it is true, been shewed some *Staphylins*, and other insects that were on smutty ears; yet, as I found the like on those that were healthy, I believe, with M. Tillet, that these insects are in no respect the cause of this distemper. We are sensible that the corn-caterpillar destroys the farina, yet it does not cause the smut. Many flies deposit their eggs in these seeds; worms proceed from them and gnaw the seed; but we do not observe that they occasion any thing like the smut—M. Hales, being willing to try whether grain bruised with the flail became smutty, chose a certain number of seeds of different sizes, and bruised them with a hammer; this seed sprouted, and bore ears that were not smutty. This experiment, made by so able a Naturalist, subverted in this manner an opinion that had been formed on the cause of this distemper.

The dung of pigeons and sheep have by some been thought to cause smut; but without reason. We have large dove-houses, the dung of which is spread on our Wheat-lands, where our sheep's dung is also laid, and we even fold our sheep there; yet it is not observed that these fields are more subject to smut than others. This opinion is therefore void of all proof.

M. Wolf imagined that smut was occasioned by the unnatural form of the embrio: but M. Aimen has refuted this opinion, by demonstrating, that in certain plants the male flower is attacked by the smut; and these flowers have no embrio.

M. Aimen has very judiciously observed, that the smut cannot be owing to any defect in the sap, as all the parts of the plants, excepting the ear, appear healthy, and there are plants perennial in their roots, which seem very vigorous; yet is their seed every year smutty.

This same Naturalist, who has made some very useful researches into the cause of the smut, properly so called, says, that this distemper arises from an ulcer which, in the first place, attacks the stamina of the seed, and afterwards infects the different parts of the flower. But the remote cause of this ulcer will, perhaps, be required. To discover this cause, M. Aimen examined several grains of Barley with a magnifying-glass; some were larger than others; many were hard, others yielded to the pressure of the nail; some were of a deep, others of a light colour; many were oblong, some rounder; their husks were cracked in several places; whereas in a natural state this part is smooth and even; finally in some he perceived black spots, and through the magnifying-glass these spots appeared to be covered with mould. These grains were carefully sorted, laid in little heaps, and sowed a part, but in the same land. All the grains that were mouldy produced smutty ears; the parched and shrivelled grains, and such as had been attacked by insects, either did not come up at all, or was not smutty. He then took some sound and healthy grains; he sowed them, and some time afterwards took them up to examine them with the glass, some of them he found mouldy, and, putting them again into the ground, they produced smutty ears.

M. Aimen, without asserting, that there is no other cause of smut, concluded from the experiments I have mentioned, that mouldiness is one of the causes of the Smut.

It is not easy to conceive that this mouldiness, or, if you will, this kind of moss, is capable of causing this distemper; for as soon as the grain has sprouted, and formed its plant, the whole substance of the seed is exhausted. Whether the husk rots or not seems to be of little consequence to the plant, which no longer depends for subsistence on the seed that had hitherto supported it. It is easily conceived that mouldiness may either kill a plant, or make it weakly. But it is not so apparent how this mouldiness can affect the organs of fructification only, and totally destroy them, without any other parts of the same plant being visibly affected; and this, though the plants should even be perennial. As to the rest, M. Aimen relates facts; and, in some measure, to account for them, one might conjecture on a supposition that the growth of plants is only an unfolding of their parts; that the organs of fructification, which existed though imperceptibly in the seed, were affected with mouldiness before the grain was put into the ground. But let us keep to well-observed facts: it is of much more importance to collect them than to be in haste to explain them by conjectures, which hitherto have been little founded on probability.

Methods of guarding against this Distemper.

To prevent this distemper M. Aimen recommends that the finest and ripest grain should be chosen for seed; that it be thrashed without delay, and immediately limed, either to prevent its becoming mouldy, or to destroy the mould, if already formed. According to this principle, the lye recommended by M. Tillet should be equally serviceable in preventing the smut, and preserving the ears from being burnt. We shall make no addition to M. Aimen's advice, not having observed so much the nature of smut as of the Charbon, or burnt ears. As this last distemper is much more terrible than the other, it has chiefly engaged our attention. According to some observations made by M. Tillet, it does not appear that the black dust of the smut, properly so called, is contagious: and we should speak more decisively in this matter, could we have collected a sufficient quantity of this black dust; but, as we have already said, there is little to be found in the barns, on account of its being before carried away by the wind and rain—We recommend it to the lovers of Agriculture to make fresh trials, in order to find whether smut is really contagious; but we warn them not to confound the Smut, properly so called, with the Charbon or burnt ears: this has led many Naturalists into errors.

ART. II.—*Of the Charbon, or Burnt Grain.*

This distemper of corn is confounded by almost every writer on the subject with the Smut, properly so called: it is, nevertheless, very different, and much more dangerous.

The Smut, properly so called, occasions the total loss of the distempered ears; but as the black dust is very fine, and the particles of it have no cohesion, the wind and rain carry it off, so that scarcely any thing is housed in the barn but the straw, which is not infectious, and does very little damage to the flour—The Charbon, or burnt grain, is, on the contrary, often laid in the granary with that which is sound, to which it communicates a contagious distemper, and also darkens the flour, and gives it a bad smell.

Characters of the Charbon.

The characters of this distemper are, 1 The Plants that produce burnt ears are strong and vigorous.

2 The infected ears are not at first distinguishable from those that are healthy; but when they are past their bloom, they appear of a deep green colour, approaching to blue; they afterwards become whitish, and are then easily known. As this change of colour is effected by the sun, when a number of white ears have been suddenly perceived in looking over a Wheat-field, the sun's heat has been often thought to cause this distemper, or a fog preceding that heat.

3 Though all the ears produced from one grain are commonly infected, yet M. Tillet, Aimen and myself, have met with sound ears on plants that had produced others which were infected. We have even found some ears, part of which only were vitiated, and

finally some grains enclosing partly a white flour, the remainder black dust.

4 In burnt ears the chaff, or outward coat, was commonly sound, with this single difference, that when the ears were near ripe, it appeared more withered and dry than in the healthy ears.

5. The bran which immediately enclosed the grain is not destroyed, as it is in the Smut, properly so called; but has consistence enough for the grain to preserve nearly its natural form, with a whitish look

6. The burnt grains are shorter, rounder, and lighter than such as are uninfected: they are sometimes larger, sometimes smaller. The furrow which runs the length of a grain of Wheat is sometimes totally effaced, at others is visible: the pistils at the extremity of the grains are dried up.

7. The but of burnt grains is not visible.

8. Till the blooming season, there is very little difference betwixt the burnt grain and that which is healthy: they are only a little more swelled. But, in the blooming season, the infected ears assume a bluish colour; the chaff is more or less specked with small white spots: the grains are of a deeper green, and larger than in a state of Nature; and, as long as they preserve that colour, they adhere strongly to the chaff The distemper has often attacked very young ears whilst yet enclosed in the sheath. The stamina on the sides of the grain are the dried up and sickly; the embryo in part takes the deep green colour abovementioned; the infected ears have not the consistence of those that are healthy; in the same measure the distemper advances, the chaff becomes dry and whitish

9. The grains have some degree of firmness. On opening them, which may easily be done with the nail, there appears an unctuous, dark, brown, stinking substance, not at all resembling the light dust of smutty ears; the dust of burnt grain has some cohesion, and through a microscope appears to consist of larger particles than that of the smutty ears.

10. Some time before the blooming season the grains appear to be filled with a whitish substance, a little burnt towards the bottom, and this colour extends by degrees over the whole ear: the grain then appears divided, as it were, into equal quarters by furrows; which disappear as the grain encreases in size

11. By what has been said, it is evident that Smut infects corn much sooner than the *Charbon*

12. Grains that are much burnt are evidently incapable of sprouting. But I have had some sound grains taken from an ear greatly burnt, which, in a kitchen-garden, have produced very strong plants; and though the birds disturbed my experiment, it appeared to me that there were some sound ears amongst many more that were infected.

13. A part of the burnt grain is bruised by the flail, and their black dust is scattered over the sound grain; this unctuous dust chiefly sticks to the hairy extremity of the grain near the bud; it there forms a black spot. Corn so affected is called *Spotted Grain*: many of the grains which escape the flail remain entire, on account of their lightness; a great deal is separated by throwing, but the spotted grain remains as well as many that are burnt; and this is enough to darken the flour, and give it a bad taste.

14. To remedy this inconvenience, and make the best bread, they pass the corn through drum-sieves (*cribles à tambour*) made of pierced iron plates, like the graters with which they rasp Tobacco; the corn is then washed, and all the light grains that swim skimmed off, which are mostly burnt. The water takes off the spots, which are but superficial; for if a spotted grain is wiped, the spot immediately disappears.

Of the Cause of the Charbon.

With respect to the cause of this distemper, I confess we are hitherto as much at a loss as in the case of Smut. Some have attributed it to dung; others to fogs; many to the heat of the sun; some to insects; others to the moisture of the land; and not a few to the seed not being ripe: but these opinions are confuted by good observations, and by experiments very carefully made. We refer to what has been said of Smut.

It may seem improbable that a mere superficial dust, that only sticks to the bran, without penetrating the grain, should be so contagious as to infect all the grain it touches, with a distemper; what is more surprising is, that it should injure the organs of fructification only. Yet however improbable this may appear, the experiments made by M Tillet put it past a doubt; they shew that the Farmers are not without reason cautious in avoiding to sow spotted grain.

As it would take up too much room to mention, at large all the experiments made by M. Tillet, which are to be found in the papers published by him on that subject, I shall content myself with relating the result of these experiments, and the inferences this able Naturalist draws from them.

Several writers having mentioned dung as the immediate cause of this distemper, and others having asserted that it was hereditary, all M. Tillet's experiments were calculated to clear up these two points: he was at the same time in hopes, by means of the same experiments, of finding some method of guarding against this terrible distemper.

1. The several kinds of dung had no visible effects in producing burnt grain. The infected seed produced as much burnt grain in the ground that was not dunged as in that which was. He did not find that dung had any effect either in favour of, or against the distemper.

2. Dung made of the straw of infected grain, did not seem to communicate the distemper; but the infected straw unrotted seemed to communicate it. Yet the effect was most visible when the dust of burnt ears was mixed with the earth.

3. All grain naturally spotted, whether it grow on the land, or was brought from another place, bearded Wheat, Summer-wheat, and Wheat without awns, produced a great deal of burnt grain.

4. Picked Wheat taken from the finest ears, and carefully selected grain by grain, that none of it might be infected, being sowed, some in dunged, and the rest in undunged beds, without having received any preparation, yielded little or no burnt grain.

5. Some of this same picked Wheat being sprinkled with the dust of burnt grain, produced as many distempered ears as that which was naturally spotted.

6. The picked Wheat, being prepared with lime and a solution of the sea-salt, yielded still fewer infected ears than when unprepared.

7. There were still fewer from what was prepared with lime and nitre.

8. Early or late sowing seemed to be a matter of indifference.

9. It appears by M. Tillet's experiments, several times repeated, that the dust of burnt ears is contagious, since sound Wheat sprinkled with it, or sowed in rills in which that dust had been put, produced a great number of infected ears. He also found that this dust, though exposed to a strong heat, as of sixty degrees, is still contagious, unless it is absolutely burnt by the fire when it has not that effect. Though it is kept for years, its infectious quality continues as strong as ever.

10. Some Farmers wash the sacks in which they put their seed. And it appears by M. Tillet's experiments, that they are in the right; for if the sacks had any of the dust on them, it would certainly infect some of the seed corn.

11. M. Tillet thinks he has observed, that the infected plants are more susceptible of injury from frost than others.

If this is the case, hard frosts must be serviceable, since by destroying the infected plants, they would have the same effect, as if such plants had all been pulled up. The land being cleared of these useless plants, would be better able to supply such as are sound with nourishment, and the crop would be exempt from infected ears, which are a great hurt to it.

12. The black dust so contagious, is not so to Rye or Bear; but the dust of Darnel is pernicious to Wheat.

13 Smyrna Wheat is less subject to this distemper than other grain; but Summer-wheat is greatly injured by it.

Methods of guarding against this Distemper.

It must be allowed that the knowledge which has been acquired of the cause of this distemper, has put the curious observers in a train of finding proper preservatives. In fact, as the dust of burnt grain infects all the grain it touches, it is probable that every method should be deemed efficacious, that is capable of taking away this dust, provided the virus has not from its first contact affected the interior part of the seed intended to be sowed. In this case the several sieves which we have recommended in the treatise of preservation of corn, and the washings with fair water, which in many places is used on spotted grain, may be mentioned as efficacious preservatives, as well as lime-water which our Farmers use, the strong brine used in some provinces of France, and the solution of Arsenic, of which some persons have made such a secret: all these preparations should be of service; and, according to M Tillet's experiments, they are so: yet they are often insufficient. This point, therefore, merited to be cleared up by particular experiments, and with all necessary care. M. Tillet set about it with spirit, and the following are the inferences that may be drawn.

1. The effect of the black dust on the seed is only superficial till it is put into the earth, not at all affecting the interior parts.

2. Therefore every means that can tend to clear them of the dust, must be of service to keep them healthy, and free from the distemper.

3. Grain perfectly free from this, and from rottenness, will yield no distempered plants.

4 Grain blackened with this infectious dust, may be made healthy by clearing it of such dust.

5. Sifting seed, and washing it in several waters, lessen, it is true, the effects of the contagion; but this is not sufficient, as many infected plants will be produced, though the seed was washed in several waters.

6. Lime, which is more efficacious than water, is not always enough so I shall observe, on this occasion, that seed was formerly limed in a manner different from what it is now. The seed was then put into baskets, which were plunged into lime-water very hot. The seed was stirred in the baskets, and all that swam on the water was taken out with a cullender; by this means they got rid of the infected grain; and the good seed was better cleaned, than by only throwing, as they do now, lime-water on a heap of seed, which is then stirred with a shovel, or by only mixing the seed with the slacked lime reduced to powder.

One of our Farmers, a careful man, being obliged one year to sow spotted seed, he limed it by immersion, in the manner above described; and the year following had no burnt grain.

Some experiments made in the country of Caux, by M. de Goufreville have been published; they evince the good effects of lime used in the manner we have mentioned. And what is still a farther confirmation of this is, that whenever our Farmers sow seed that has not been limed, their fields are amazingly infected

7. It is a good precaution to wash spotted grain in several waters; but it should be soaked in brine, and this brine should be absorbed by lime, by immersion, as we have described.

8 A strong brine of sea-salt is very good, and may be employed to great advantage in countries where salt is a merchandize.

9. One part of nitre to nine parts water is more efficacious than sea-salt; this, therefore, should be used where nitrous earths abound.

10. Strong alkaline lyes are still better; salt wort, pot-ash, ashes of tartar, lyes of common ashes much impregnated with salt and human urine, or cows urine, alkalised by putrefaction: of these various articles such may be chosen as are most common. For instance, in Normandy ashes of sea-wrack, which are very cheap there, may be used. This which is rejected for dying and lyes, as being more impregnated than alkaline with sea salt, may be advantageously used in the preparation of seed.

11 As it is evident that seed picked with care

yields very few infected grains, it must, of course, where a Farmer has spotted grain, be of great advantage to him to change his seed in order to procure what is uninfected.

12. M Tillet's process may be comprehended in what follows: If the seed is spotted, it should first be washed in several clear waters till the black is quite got off; it should then be put into the steep. If it is not spotted, soaking it in the following liquor will be enough. Make some lye, such as is used for linen, in a bucking-tub, putting four pound of water to every pound of ashes. If one hundred pound of ashes are used and four hundred pound of water, there will be two hundred and forty pound of lye, to which must be added fifteen pound of lime, which will be enough to prepare sixty French bushels of Wheat (betwixt sixteen and seventeen bushels English measure.) When this steep is to be used, it must be heated as hot as you can bear your hand in it; the seed, being put into baskets, must be plunged into it, and stirred with a stick; the baskets must then be raised and kept up by sticks on the edge of the bucking-tub for the lye to drain; the seed being thus prepared must be laid on the floor of the granary till it is dry enough to sow. If it is prepared long before it is wanted, it must be, from time to time, stirred with a shovel to prevent its heating; with this precaution it may be kept a month, or even a whole year.

We prepared some seed in this manner at M. Taponat's, near Rochefoucault in 1760; and in 1761 we saw with pleasure that the corn so prepared was uninfected, whilst in the neighbouring fields, a fourth, a third, and even half the crops were spoiled by this distemper.

All the trials that have been made evince that acrid substances are proper remedies for this distemper: I also believe all the steeps to be good; but prefer M Tillet's as being more acrid and least costly. I imagine lye that had been used for linen might do, only strengthening it with some sea-wrack, and putting twice as much lime. I know this lye to be very acrid, but cannot answer for its efficacy in preserving corn from being burnt, because for several years past we have scarcely had any of our grain so infected.

13 Several Farmers in different provinces have used a solution of Arsenic to prepare their seed.—Great complaints have been made in all quarters of it Among others, a Physician published an essay to shew of how much importance it was to prohibit the use of this poisonous steep. He there enumerates all the accidents that have happened to the sowers and to the men that made the preparation, of which himself was a witness. Since M. Tillet has given us a method simple and innocent in itself, but little costly and of great efficacy to clean spotted grain, it is to be presumed that no body will use this pernicious drug, from which such melancholy consequences may ensue, if by accident any of it should be mixed with the meal, and if the light corn is given to the poultry or cattle; besides, this poisoned seed must kill all the partridges and pigeons that eat the uncovered grain.

As some people are fond of making objections, it may, perhaps, be urged, that if the black dust was so infectious, this distemper would make from year to year such progress, that in the end we should have nothing but burnt grain. But we need not be apprehensive in this respect; and a year in which much corn is infected, succeeds one in which scarcely any burnt grain was to be met with. Scarcely any was to be found in the crops of 1754, 1760, and 1761.

In reflecting on this objection, which has some weight, I think I have found an answer to it in M Tillet's observations, which is, that hard winters, past all doubt killing the distempered plants, stop its progress.

It may also be said, that if this distemper is only caused by the infectious dust, how can it at first get footing in a province that was before unacquainted with it?

It is readily allowed that this distemper may be attributed to other causes besides the black dust: but M Tillet's experiments incontestibly prove this dust to be contagious; and his researches supply us with the means of lessening considerably if not entirely extirpating this distemper: thus we may have larger crops, better bread, and corn more proper for keeping. What a satisfaction must it be to a man to have made a discovery so useful to his fellow-creatures, whose chief food is the several sorts of grain? We shall soon see whether habit, supineness, and ill-judged œconomy in the Farmers, will not prevent them from reaping any benefit from M. Tillet's labours, who yet proposes to them simple and cheap methods of attaining an end which to them ought to be of infinite consequence.

FOR THE AMERICAN FARMER.

On the Smut in Wheat.

Hardy County, Va. Sept. 25, 1820.

MR. SKINNER,—I made an observation on the smut in wheat, I have not seen mentioned by any of your correspondents, in the beginning of August, on a visit to a young friend who had the smut in his wheat. I had never seen it only in the cleaned grain, and wished to examine it in the head. I walked with him to his stacks, we found the heads that were hanging outside the stacks eat, the chaff cut as if an insect had cut its way into the grain, or out.—On further examination, I found the passage to be into the grain through the bran, and the black dust entirely consumed, leaving the bran of the grain nearly whole, only the small round hole for the passage into the smut. We soon found heads with several small brown or brindled shelled bugs on them, such as described by one of your correspondents some weeks past. I observed they were what consumed the smut. My next object was to see whether they cut their passage in or out of the grain. by breaking a few grains that appeared whole we found the bug inside the bran in several that had no appearance of perforation, and the black smut entirely consumed. I pulled several handfulls out of the stack, but could find no appearance of the bug being hatched in the grain in the body of the stack. It may be that the egg is prevented from producing its bug by the heat and pressure of the grain, or for want of air or sun. If gentlemen that have grain stacks near them that have the smut will examine them, they will be able to judge, by observing if the heads outside the stack is eat, as I have said, and also, can see whether the insect has hatched in the body of the stacks. I have no grain near me with the smut, or I would have examined farther.

At the time I was convinced the bug hatched inside the grain, and was supported by the black dust, until it came out after the smut was consumed, as I have not seen it mentioned by farmers of more observation and better opportunities of smutty wheat near them, I begin to doubt that I was too soon convinced of what perhaps may not be a fact,—but the point will not be difficult to determine.

Sir, your's with respect,
ABEL SEYMOUR.

TO THE EDITOR OF THE AMERICAN FARMER.

SALT.

The reasons why that made in the Western Country, does not answer as a preservative of Beef and Pork.

SIR SKINNER,

A tour through the Western Country, lead me into an inquiry of the causes why the salt made there, would not answer as a preservative of provisions. It is well known, that the meat salted on the Ohio and sent to New-Orleans, after a short exposure to that climate, becomes either tainted, or totally unfit for use unless repacked; and the cause assigned therefor, is either the impurity of the salt with which it is packed, or want of strength in the salt itself.—For all culinary and domestic purposes, the salt made in the west answers every purpose; and probably the high prices obtained for that article, have caused the makers to feel indifferent to improvement, as a ready sale is always obtained for that which is offered If this be the case which I believe to be so, would not the value be enhanced if it were so prepared, as to be an effective condiment for provisions? The advantages therefrom would not only be an increased price of the salt, but the western people would be enabled to send their produce to market in a cheaper and less laborious manner, than driving their cattle to the Eastern states. Those who are acquainted with the subject will admit, that the beef and pork raised in Ohio and Kentucky, are superior to that of the Eastern states, which indeed is obvious, and as long as the soil is more productive and the sustenance of animals more easily procured, must be the case.

After some inquiry, I am induced to believe, that the cause may fairly be attributed to the manner in which the salt is prepared, and this opinion is strengthened by a comparison of the processes adopted by other nations with those of our Western Brethren.

Some years ago the salt used for the preservation of provisions for the Navy of Great Britain was imported, although it is well known that few countries abound more with that article, and after much investigation, it was discovered that the process pursued in the manufacture, would not produce a salt suitable for preserving provisions in warm climates, or on long voyages. A different method has since been adopted, which has proved successful, and British salt is now used for those purposes for which formerly, imported salt was required.

To preserve provisions, it is absolutely requisite that the salt should be of large grain, and if in addition to general experience, if proof thereof were required, there could not be a more decisive one given, than that the only remedy used as a preservative of the provisions which arrive in the Atlantic ports from the Western states, is simply repacking them with coarse salt—and almost in every instance the provisions brought to the Eastern market requires this procedure, which is attended with considerable expense. If it be a fact then that fine salt will not answer the purpose of preserving provisions, it may be useful to suggest a method whereby a proper granulated salt may be prepared, and which is here given in the words of Mr. William Henry, a gentleman eminent for his abilities, and surpassed by few for his chymical researches.

"The method now adopted by the manufac-
"turers of this article, (large grained or fishery
"salt) to make a salt proper for preserving
"meat for the Navy or for long voyages is pre-
"pared from brine, heated from 100 to 110
"Fahrenheit, no perceptible agitation there-

"fore is produced in the brine, and the slow-"ness of the process which lasts from 7 to 8 "days, allows the muriate of soda (or salt) to "form in large and nearly cubical chrystals, "seldom however quite perfect in their shape. "For ordinary domestic uses, stoved salt is per-"fectly sufficient — Common salt is adapted to "the striking and salting of provisions which "are not intended for sea voyages or warm "climates. For the latter purposes the large "grained or fishery salt is peculiarly required."

The process of making salt in the Western states, is so very different from the method here given, that it may not be unreasonable to suppose that the cause of the salt not answering the purpose of a condiment, arises principally from the manner in which it is made.—The limits of this paper will not permit a description of the method of preparing this article in the west; it is however proper to state, that the favorite process is hastening evaporation by application of great heat, which is essentially different from the plan adopted in England and Holland, and experience has taught them the benefit of pursuing a contrary course.

In reasoning on the cause of the differences among the several species of salt, Mr. Henry conceives, that the trifling variation in strength between the coarse and fine salts, is not sufficient to account for the properties imputed to them—as upon experiment the finest stoved salt, and coarse fishery salt differed in a very trivial degree as to the kind or proportion of their ingredients, and which are adapted to different uses, the large grained salt being peculiarly fitted for the packing of fish and other provisions; for which the smaller grained salt is much less suitable, and for which he accounts as follows:—"Their different powers of pre-"serving food must depend on some mechanical "property; and the only obvious one, is the "magnitude of the chrystals, and their degree "of compactness and hardness. Quickness of "solution, it is well known, is pretty nearly "proportionate, all other circumstances being "equal, to the quantity of the surface exposed. "And since the surfaces of cubes are as the "squares of their sides, it should follow that a "salt whose chrystals are of a given magnitude "will dissolve four times more slowly, than one "whose cubes have half the size. That kind of "salt then which possesses most eminently the "combined properties of hardness, compact-"ness and perfection of chrystals, will be be t "adapted to the purpose of packing fish and "other provisions, because it will remain per-"manently between the layers, or will be very "gradually dissolved by the fluids which exude "from the provisions; thus *furnishing a slow* "*but constant supply of saturated brine.* On "the other hand for the purpose of preparing "the pickle or *striking* the meat, which is done "by immersion in a saturated solution of salt. "the small grained varieties answer equally "well, or on account of their greater, solubility "even better."

From the foregoing, it appears that the salt necessary for preserving provisions, should be of large hard grains, and which can only be prepared by a gentle heat.—Violent coction invariably produces the reverse, which is of a soft loose grain, and disposed to grow moist in the open air; the latter method is generally adopted in the Western Country, and to which may be attributed the reason why it will not answer as a proper preservative of meat.

Baltimore, Sept. 22nd. 1820.

FOR THE AMERICAN FARMER.

Mr. Skinner,

Sir,—Agreeably to what you, (and through you the public,) have been led to expect in support of the theory I have advanced, the practical application of which was to roast Coffee and rye in such a way, and by such a process, that the whole essential properties of Coffee may be so far transferred to an equal quantity of rye, that it is nearly if not utterly impossible for the nicest judges to descern the shadow of a difference. I shall here attempt to support the above position, by explaining the nature of the process; and thus make the secret plain, will be the subject of the present communication.—And if I should be so successful as to have contributed by any means my feeble effort to facilitate the very laudable exertions so general throughout all ranks of this vast community to retrench and economise, I shall consider myself in this alone amply remunerated.

The article of Coffee is one of great national consumption, and not the least expensive in domestic economy; hence great efforts have been made, and numerous and multiplied experiments essayed, (particularly of late) to find out a cheap, wholesome, and pleasant substitute for Coffee; and hence the whole vegetable kingdom has been explored, and almost every herb of domestic culture, together with every species of grain that waves to the breeze, has been minutely tried, but without arriving at the desideratum.

It appears, however, that Rye has obtained a preference over every thing yet tried or known as a substitute for Coffee, if its more general use is a fair criterion by which to judge; and although it is generally believed, that it actually possesses qualities approximating nearest to that of Coffee, yet still there is a nauseous, flat, unpleasent taste much complained of even when used in equal quantities, and which has operated very considerably against its universal adoption. How far the plan now proposed will go to correct this rank, unpleasant taste, so as to remedy the evil—I shall leave to the candor of those who shall try the experiment for themselves.

The leading principles of the process are as follows.—The Rye is roasted first perfectly; the instant it is done the Coffee must be put in with the Rye, and kept regularly moving until the operation is completed.—The practicability of the mode of roasting, as above stated, appears to be very much doubted, while the effect intended to be produced, seems to be admitted by all. And indeed it does look so very likely at first view, that the Rye at this particular moment (up to the highest degree of heat that is required to roast it completely) should not be literally burnt to coal, by the time the Coffee shall have become perfectly done.

But the nature of the process and the peculiar mode of the operation, need but be glanced at to show that the principles upon which the *roasting* is performed, is perfectly philosophical, and yet as simple as that the effect intended to be produced is certain.

Which may be explained as follows—When the Coffee is put in with the roasted Rye, it will be recollected, that it is in a cold (or at least a cool) state, consequently the moment it is put in and becomes intermixed (which will be as quick as the cylinder is put in motion, it will have the effect immediately, to check and reduce the heat in the Rye many degrees, in the same ratio as the respective properties of heat and cold are equally transferred to each other, by which means they both come to a perfect equilibrium of temperature, and of course several degrees below what the rye stood at when the Coffee was put in with it. It will also be recollected, that rye requires a much greater degree of heat to roast it perfectly, than what is required to perfect the roasting of Coffee. It therefore follows of necessity, that Coffee may be roasted with the roasted rye without the least danger of *burning* the rye for this very obvious reason, that the Coffee will invariably have acquired a perfect roasting, before it ever can arrive at the degree of heat required to roast the rye.

To explain the nature and manner, and to what extent the aromatic quality and essence of Coffee is communicated, or transferred to the roasted rye, would be very difficult if not impossible, yet the fact itself is not therefore less certain.

It may be explained and demonstrated as follows—It is well known to all, that a very considerable proportion of the essence, and flavour of the Coffee actually escapes and evaporates in air. The object in view then, is so to manage the process in roasting, as to arrest and confine this rising vapour within the sphere of the roasting vessel, and thus transfer the essence of the roasting Coffee to the roasted rye. To accomplish this desirable object, a close vessel or cylinder, must invariably be employed, otherwise the end will be entirely defeated.

The Rye, then, being roasted, under which operation its juices and vegetable oil have been thrown out, it is put in the best possible condition to imbibe the real essence of the Coffee, as in this instance each grain of rye is somewhat like an empty vessel, which may be filled with whatever can be transferred or communicated to it. It perhaps would not be unworthy of remark here to observe, that if it was practicable to roast Coffee and rye at one and the same time in any possible way, that it would be just as reasonable to suppose, that the rye would impart to the Coffee as great a proportion (if not greater. it possessing evidently more juice) of its flat, unpleasant qualities, as that the Coffee would transfer its aromatic quality and essence to the rye. A like process will produce a similar effect, in roasting any other grain, which requires more heat than Coffee, in the roasting. Having myself discovered in the course of experiments, that a small parcel of Coffee being put in with the rye, (before the latter was roasted,) and both roasted together, the Coffee became so much impregnated with the flavour and spirit of rye, as not to be distinguishable, by smell, from the rye.

While I am not insensible to the very considerable improvement, and economising, which I have already realized, I would respectfully call the attention of men of science and others to a further examination, and even severe scrutiny, into this interesting subject—a subject vastly important to individuals and nations.

P. WILLIAMSON.

FOR THE AMERICAN FARMER.

I observe in the last American Farmer a notice by T. H.. who recommends winter ploughing for the killing of Garlic, which I agree with him to be a good mode, and one that is well understood in this part of the country from 20 to 30 years past, and I believe noted in the first volume of the Farmer.

And further T. H. assures us, (by wandering a little from the subject,) as he says, that if the correspondent who wrote last year on the Ripple Grass is still attached to it, he is disposed to bargain an exchange of his for almost any other on any terms—and proposes something like an agency in the business for his neighbours, as they have not yet discovered it to be valuable.

I think nothing strange of their want of knowledge on this head, as in the outset he observes to the Editor, that he "has neither rich land, nor industry to work it if he had."

Under those circumstances, neither he nor his neighbours, if they are of the same cast, and labouring under the same difficulties, can expect, either to discover the true value of any productions of good soil and good tillage, or make any advantageous change of products with the latter description—therefore such a traffic must not be expected, as it would have an unequal bearing on the parties.

As to my attachment to the article in question, it is so far from being diminished, that it is increased from further experience; two succeeding dry seasons that are now passing on, and the advantages in affording a succulent herbage when may others fail.

I am well aware of the impression made by a deep rooted prejudice, having laboured under it and often contrary to my better judgment, as was the case respecting the grass in question.

It is treated by many with disregard and many more with hostility—then the comparison of those kindly treated, and the product of it is placed in competition, and what is the result—an erroneous conclusion no doubt.

And it is well understood at this enlightened period in the history of vegetation, that good culture and judicious management in selection of seed has a powerful effect; on the product of many, or I might say, all of our valuable plants—I shall at present leave this part of the subject until more leisure to state facts, that have come under my own observation, respecting that matter, and return to the Ripple Grass, which has claimed my attention upwards of twenty years on such soils as I have had most to do with—and in the mean time conversed with the most eminent grazing farmers in this and the neighbouring states, especially Pennsylvania, and although divers of them called it a good grass—I could not give into the same opinion with full assent, my prejudice stood in the way until experimental facts removed every doubt, as it regarded my soil both hilly and dry land, as well as creek bottoms adjoining—the latter produced this season in conjunction with clover a considerable portion three feet high. have been cut twice, and now luxuriant pasturage in a high state of verdure, as it will grow until hard frost.

I did not consider this hay as good as on the high ground, where the stalks were smaller and clear of weeds; this was the first year's product after sown with wheat; that of a second year's growth is still better pasturage, the green grass beginning to rise amongst it in places, and a cessation of ploughing brings it into a much better pasturage, as the bottom fills with a thick pile of fattening herbage—I prefer cutting but once a year.

Respectfully, from C. KIRK.

Brandywine, 27th, 9 mo.

P. S. If T. H. or any other in the unbelief, will do me the favor of paying me a visit, I shall with pleasure give them occular demonstration of facts as in the foregoing; an intercourse of this kind would do more than volumes written theoretically, and under ficticious signatures.

C. K.

Artificial stone floors and coverings for houses as made in some parts of Russia.

The floors and coverings of houses in some parts of South Russia are made in the following manner:—For a floor let the ground be made even, and some stones of any shape be put on, and with a heavy wooden rammer force or break the stones into the ground, continuing to beat the floor until it becomes quite even, and incapable of receiving any further impression. Then run lime, immediately after it has been slacked, through a fine seive as expeditiously as possible, because exposure to the air weakens the lime. Mix two parts of coarse sand or washed gravel, for there must be no earth in it, with one part of lime powder, and wet them with bullock's blood: so little moist however, as merely to prevent the lime blowing away in powder—in short, the less moist the better: spread it on the floor, and without a moment's loss of time, let several men be ready with large beetles to beat the mixture, which will become more and more moist by the excessive beating requisite. Then put on it some of the dry sand and lime mixed, and beat it till like a stone. If required to be very fine, take for the next layer finely sifted lime, with about a tenth part of rye flour, and a little ox blood; beat it with a trowel. The next day again smooth it with a trowel, and so continue to do daily till it be entirely dry. When it is quite dry and hard, rub it over with fresh ox blood, taking off all which it will not imbibe. No wet will penetrate this composition, which, however, after some time is often painted with oil colours. The whole floor appears as a single stone, and nothing will affect it.—The drier it is used the better, provided that with much beating it becomes like a very stiff mortar, and evidently forms a compact body.

On flat tops of houses, the beetles or rammers' ends must be smaller, to prevent the rebounding of the boards and timber, which would crack the cement; but, when the thickness of a foot is laid on, it will beat more firmly. A thick coating of ox blood, flour and lime, being beat in large, strong wooden troughs, or mortar, till it can be spread with a trowel, may be used without beating it again on the floor or house-top: but it must be very stiff and used most expeditiously. Even frost will not affect it. With this composition, artificial stone may be made, rammed very hard into strong wooden frames of the required shape, particularly to turn arches for buildings of rammed earth. It is well known that earth which is not too argillaceous, with only the moisture it has when fresh dug, on being rammed between frames of wood till the rammer will no longer impress it, makes eternal walls; but a mass as hard as stone may be made with a little lime added to sand, horse dung or ox blood. The more the lime is beaten, the moister it becomes, and it must contain so much moisture as to become by beating a solid mass, adhering in all its parts, and not remain crumbling, that will properly set as a mortar. If there be too little moisture at first, it will remain a powder; if there be too much it will become a soft mortar. Lime is of no use mixed with clay or vegetable earths, which, if well beaten, are stronger without it.

THE FARMER.

BALTIMORE, FRIDAY, OCTOBER 6, 1820.

☞ The account of the Grand Annual Sheep Shearing, as it is called at Holkham—the name of Mr. Coke's estate in Norfolk England, will be found highly entertaining.—We publish it to shew the honours due to, and the pleasures to be derived from agriculture. It is not saying too much to aver, that Mr. Coke's munificence and public spirit have laid the foundation of improvements, which give him a claim, on the gratitude of the friends of agriculture in all parts of the world.

In our two succeeding numbers, we shall give the proceedings of the second and third day's meeting.—These proceedings are copied from the London Farmers' Journal, and we are happy to inform our subscribers, that arrangements have been made, whereby we shall hereafter receive regularly the best periodical publications of England, Scotland and France, on agriculture and Internal Improvements. If for our part in accumulating the means of giving them valuable information, our subscribers think us entitled to any thing beyond the mere price of subscription, they can manifest their kindness in no way more effectually, than by sending us *some additional subscribers*.

We are in no danger of being in want of *valuable* materials for conducting this Journal, in a spirit and on a scale to make it still more useful than it has been—provided the number of subscribers should continue to justify and encourage it; but all depends on that, since we can have no reliance on advertisements.

☞ Considerations on the Smut in Wheat, have occupied more room than would have been given to them if the season were not so far advanced—our pages will seldom be so monotonous as they are this week.

Present Prices of Country Produce in this Market.

Actual sale of WHEAT, 82 to 83 cts—CORN, 41 to 43 cts—RYE, 38 to 40 cts—FLOUR, from the wagons $4 75 to $5 87½—WHISKEY, from do. 35 cts—HAY, per ton $16—STRAW, do $7—Maryland TOBACCO, 1 hhd. from Calvert county at $8—3 hhds crop, from Anne Arundel, at $9—1 hhd do. at $11—3 hhds do. second, at $6—No sales of Virginia TOBACCO—North Carolina produce, same as last report.